

by the most accomplish'd Mr. *Evelin*, my highly honour'd friend, to be inserted and published among those excellent Observations wherewith his *Sylva* is replenish'd, and would therefore have been here omitted, had not the Figure of them, as they appear'd through the *Microscope* been before that engraven.

This *Petrify'd* substance resembled Wood, in that

First, all the parts of it seem'd not at all *dislocated*, or alter'd from their natural Position, whilst they were Wood, but the whole piece retain'd the exact shape of Wood, having many of the conspicuous pores of wood still remaining pores, and shewing a manifest difference visible enough between the grain of the Wood and that of the bark, especially when any side of it was cut smooth and polite; for then it appear'd to have a very lovely grain, like that of some curious close Wood.

Next (it resembled Wood) in that all the smaller and (if I may so call those which are onely visible with a good magnifying Glass) *Microscopical* pores of it appear (both when the substance is cut and polish'd *transversely* and *parallel* to the pores of it) perfectly like the *Microscopical* pores of several kinds of Wood, especially like and equal to those of several sorts of rotten Wood which I have since observ'd, retaining both the shape, position and magnitude of such pores. It was differing from Wood:

First, in *weight*, being to common water as $3\frac{1}{4}$ to 1. whereas there are few of our *English* Woods, that when very dry are found to be full as heavie as water.

Secondly, in *hardness*, being very neer as hard as a Flint; and in some places of it also resembling the grain of a Flint: and, like it, it would very readily cut Glass, and would not without difficulty, especially in some parts of it, be scratch'd by a black hard Flint: It would also as readily strike fire against a Steel, or against a Flint, as any common Flint.

Thirdly, in the *closeness* of it, for though all the *Microscopical* pores of this *petrify'd* substance were very conspicuous in one position, yet by altering that position of the polish'd surface to the light, it was also manifest, that those pores appear'd darker then the rest of the body, onely because they were fill'd up with a more duskie substance, and not because they were hollow.

Fourthly, in its *incombustibleness*, in that it would not burn in the fire; nay, though I kept it a good while red-hot in the flame of a Lamp, made very *intense* by the blast of a small Pipe, and a large Charcoal, yet it seem'd not at all to have diminish'd its extension; but only I found it to have chang'd its colour, and to appear of a more dark and duskie brown colour; nor could I perceive that those parts which seem'd to have been Wood at first, were any thing wasted, but the parts appear'd as solid and close as before. It was further observable also, that as it did not consume like Wood, so neither did it crack and flie like a Flint, or such like hard Stone, nor was it long before it appear'd red-hot.

Fifthly, in its *dissolubleness*; for putting some drops of distill'd *Vinegar* upon the Stone, I found it presently to yield very many Bubbles, just like those which may be observ'd in spirit of *Vinegar* when it corrodes corals, though

though perhaps many of those small Bubbles might proceed from some small parcels of Air which were driven out of the pores of this *petrify'd* substance by the insinuating liquid *menstruum*.

Sixthly, in its *rigidness* and *friability*, being not at all flexible but brittle like a Flint, insomuch that I could with one knock of a Hammer break off a piece of it, and with a few more, reduce that into a pretty fine powder.

Seventhly, it seem'd also very differing from Wood to the touch, feeling more cold then Wood usually does, and much like other close stones and Minerals.

The Reasons of all which *phenomena* seem to be,

That this *petrify'd* Wood having lain in some place where it was well soak'd with *petrifying* water (that is, such a water as is well *impregnated* with stony and earthy particles) did by degrees separate, either by straining and *filtration*, or perhaps, by *precipitation*, *cohesion* or *coagulation*, abundance of stony particles from the permeating water, which stony particles, being by means of the fluid *vehicle* convey'd, not onely into the *Microscopical* pores, and so perfectly stoping them up, but also into the pores or *intersticia*, which may, perhaps, be even in the texture or *Schematisme* of that part of the Wood, which, through the *Microscope*, appears most solid, do thereby so augment the weight of the Wood, as to make it above three times heavier then water, and perhaps, six times as heavie as it was when Wood.

Next, they thereby so lock up and fetter the parts of the Wood, that the fire cannot easily make them flie away, but the action of the fire upon them is onely able to *Char* those parts, as it were, like a piece of Wood, if it be clos'd very fast up in Clay, and kept a good while red-hot in the fire, will by the heat of the fire be charr'd and not consum'd, which may, perhaps, also be somewhat of the cause, why the *petrify'd* substance appear'd of a dark brown colour after it had been burnt.

By this *intrusion* of the *petrifying* particles, this substance also becomes hard and *friable*; for the smaller pores of the Wood being perfectly wedg'd, and stuff'd up with those stony particles, the small parts of the Wood have no places or pores into which they may slide upon bending, and consequently little or no flexion or yielding at all can be caus'd in such a substance.

The remaining particles likewise of the Wood among the stony particles, may keep them from cracking and flying when put into the fire, as they are very apt to do in a Flint.

Nor is Wood the onely substance that may by this kind of *transmutation* be chang'd into stone; for I my self have seen and examin'd very many kinds of substances, and among very credible Authours, we may meet with Histories of such *Metamorphoses* wrought almost on all kind of substances, both *Vegetable* and *Animal*, which Histories, it is not my business at present, either to relate, or *epitomise*, but only to set down some Observation I lately made on several kind of *petrify'd* Shells, found about *Keinsbam*, which lies within four or five miles of *Bristol*, which are commonly call'd *Serpentine-stones*.

Exami-